



U.S. Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

SEP 14 2004

DOT-E 7542
(EIGHTH REVISION)

EXPIRATION DATE: July 31, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Taylor-Wharton
Huntsville, AL
2. PURPOSE AND LIMITATIONS:
 - a. This exemption authorizes the manufacture, mark, sale and use of non-DOT specification cylinder conforming with all regulations applicable to a DOT Specification 4BW cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a), 173.304a(a), 173.305(a) and 175.3 in that non-DOT specification cylinders are not authorized, except as specified herein.
5. BASIS: This exemption is based on the application of Taylor-Wharton dated August 20, 2004 submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Acetylene, dissolved	2.1	UN1001	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packagings are non-DOT specification steel cylinders which comply with DOT Specification 4BW (§§ 178.35 and 178.61) except as follows:

(i) Each cylinder must comply with § 178.35 except that § 178.35(b)(1) does not apply.

(ii) Each cylinder must comply with §§ 178.60(g)(2), 178.60(p), 178.60(q) and 178.60(r). Cylinders must have a service pressure of 250 psig. Heads concave to pressure must have minimum thickness equal to required thickness of sidewall. Heads convex to pressure must have minimum thickness equal to 2.5 times the required thickness of the sidewall. A round out pressure must be applied prior to the official test prescribed in § 178.61(i). Test pressure must be at least three times the service pressure and the minimum burst pressure must be six times the service pressure. Cylinders having outside diameters greater than 5 inches must have a minimum wall thickness of 0.087 inch. The wall stress must be calculated by the formula:

$$S = 3P(1.3D^2 + 0.4d^2) / [E(D^2 - d^2)]$$

(iii) Cylinders must not be identified as DOT-4BW and, instead, each one must be marked "DOT-E 7542." The applicable portion of the inspector's report must be so noted.

(iv) Only those cylinders that comply with the specifications, calculations, and test data included in reports dated May 27, 1975, January 24, 1976, and June 24, 1976 submitted to and on file at the Office of Hazardous Materials Exemptions and Approvals (OHMEA), are qualified under the terms of this exemption. Tests

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to qualify cylinders of any new design that differ from the above (e.g., change in diameter, length, volume, ends, etc.) must in addition to the 49 CFR requirements, satisfy the following, and the results thereof must be submitted to OHMEA:

- (1) Cycle test data, 20,000 pressure cycles, from approximately zero psig to test pressure at a rate not to exceed ten cycles per minute.
- (2) Permanent deformation measurements on heads convex to pressure as a result of cycle tests.
- (3) Burst tests.
- (4) Hydrostatic test result comparison to existing cylinder models.
- (5) Drawings.

b. TESTING - After June 30, 2002 each cylinder must be requalified in accordance with the requirements for DOT 8 and 8AL cylinders as described in § 180.209(i).

8. SPECIAL PROVISIONS:

- a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.
- b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modification or change is made to the package or its contents and it is offered for transportation in conformance with this exemption and the HMR.
- c. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.
- d. Each packaging manufactured under the authority of this exemption must be marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

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- e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and rail freight.
10. MODAL REQUIREMENTS: No additional requirement required.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
 - o Persons operating under the terms of this exemption must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.
- Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.
- No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.
12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken

under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C:



Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.
Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: KFW/aln